1.0

Purpose Of Document

This document is the final deliverable for the first phase of the Eastern Tier Interoperability Consortium's Interoperable Communications Plan (ICP) project. The document was written to show both the process and results of the phase. It contains all information necessary to allow the reader to determine why the project was undertaken, what activities were performed during the project, and what the results of the project were.

Throughout this document, the Eastern Tier Interoperability Consortium may be referred to as the ETIC or "the consortium."

The Northrop Grumman Corporation site in Helena, Montana is pleased to present this to the Board Members of the consortium. It has been our pleasure to work with the consortium members and stakeholders.

Format Of Document

The document is divided into the following sections:

- Section 1.0, *Introduction* (this section) provides the reader with information about this document.
- Section 2.0, *Background,* discusses the background for the project, from a historical, statewide perspective, as well as its motivations, goals, and purpose.
- Section 3.0, *Project Activities* details the activities which took place during this phase of the project.
- Section 4.0, *Results* contains a record of the results from this project phase.
- Section 5.0 contains several appendices with detailed information from the project.

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2.0 Background

Historical Perspective – Other Similar Projects And Consortia

Montanans have always had the need for close communication, cooperation, and collaboration between their Law Enforcement and Emergency Responder agencies. The emergency situations the state can and has faced include natural disasters such as forest fires and earthquakes (the most recent large one in 1959 at a magnitude of 7.3), as well as manmade disasters such as the 1996 trail derailment in Alberton Gorge (and subsequent poisonous chlorine gas release) and the 1988 train derailment and explosion in Helena (when it was 30 below zero). In each situation, Montana's Emergency Responders have had to communicate and coordinate in order to react effectively to these emergencies and meet the needs of their citizens. While our emergency responders have always been successful at this, roadblocks have, at times, gotten in the way. Sometimes these roadblocks are technological ("My radio can't talk to your radio") and sometimes they are procedural and political ("That's not our procedure in this situation," or "That's not our policy,").

After the terrorists attacks of September 11, 2001, agencies in these communities and throughout the state and nation have felt an even greater need to develop and maintain plans of cooperation and coordination. Part of this effort has been to work toward the interoperability of the communications equipment used throughout each region and the entire state. Additionally, this effort has included revisiting, renewing, revising, and sometimes creating agreements of understanding and cooperation between the various stakeholder agencies.

Often, the challenges of communications interoperability have been met through "home-grown" efforts, almost on a case-by-case basis. In many cases the interoperability is good. Historically, however, communication problems are almost always listed among the top five problems in post-incident reviews, which suggests that there is room for improvement.

To address and help remedy these situations, various entities within the State of Montana have been formed. The State of Montana began an effort in this regard at the state level several years back. Recently, Lewis & Clark County conducted a successful pilot interoperability project (the Concept Demonstration Project 1, or CDP1) to coordinate services between emergency responders. This project established direction and infrastructure for the county, as well as demonstrated the technology and ability to implement interoperability across agencies – state, local, federal, and private. The Northern Tier Interoperability Consortium (NTIC), which consists of twelve Montana counties and four Indian nations, was formed to deal with these same issues. NTIC initiated the Northern Tier Interoperability Project (NTIP), adopted the same directions and infrastructure decisions made by Lewis & Clark County. Subsequently, the ETIC also made the decision to adopt the directions and decisions already made by Lewis & Clark County and the NTIC. Of equal importance, both projects demonstrated the ability for diverse agencies to cooperate and succeed.

Part of the solution to the problems of interoperability is something called the Project 25 standard. Project 25 (P25) is a set of guidelines developed by radio system users for the purpose of standardizing the method of designing radio telecommunications networks for public safety agencies. Agencies such as the Association of Public Safety Communications Officials (APCO), the National Association of State Telecommunications Directors (NASTD), the Telecommunications Industry Association (TIA), the International Association of Chiefs of Police (IACP), several federal agencies and radio manufacturers have all participated in building this important standard.

Project 25 ensures that all systems following this standard will meet its five main objectives:

1. To make efficient use of the limited number of available public safety frequencies.
2. To permit interoperability among other Project 25-compliant agencies.
3. To ensure backward compatibility of the network.
4. To create smooth system migration via upgrades, additions, etc.
5. To provide the capability for scalable trunked and conventional networks.

Motivation and Goals Of The Eastern Tier Interoperability Consortium

Rationale For The Consortium – Representatives from the ETIC have stated in their project Proposal Abstract that the counties "do not have the ability to communicate effectively." Additionally, a consortium carries more clout than one single county does when trying to secure outside funding from state and federal sources.

The Goals
In order to improve the communication between the counties, the Eastern Tier Interoperability Consortium was formed. The stated goals from its Proposal Abstract are:

1. "To become Project 25 (P25) compatible, allowing communications between all emergency agencies in the … counties."
2. "To develop a multi-county interoperable communication system to improve coverage and dependability by upgrading existing equipment with P25 compatible equipment."

In the same document, the ETIC has further stated, "This is a collaborative effort and our needs meet the goals and objectives of the Montana Statewide Interoperability Plan. The E.T.I.C. will propose to broaden the state's plan, by opening up communications with neighboring states of North Dakota, South Dakota and Wyoming."

Goals Of The Montana Statewide Interoperability Plan

1. "To build a cost shared, reliable and effective P25/TIA 102A standard communication system capable of providing interoperable wireless voice systems for first responders, mutual aid, and emergency medical response roles ensuring the safety and well being of all Montanans.
2. "to develop a national standards-based voice communication system

3. "to develop a shared, digital microwave system capable of supporting current needs and future trunked systems
4. "to plan a phased, modular approach for implementation
5. "to promote spectrum management
6. "to allow existing users to migrate seamlessly into the shared system
7. "to educate the legislature and key policy-makers in local, state, and federal governments in order to gain strong support and adequate funding."

Rationale For The Montana Statewide Interoperability Plan

1. "to replace non-interoperable two-way radio communication systems with an interoperable system capable to handling communication among federal, state and local governments, and the military complying with a national standards baseline, improving public safety response and safety
2. "to replace existing equipment that is obsolete
3. "to incorporate new Federal NTIA regulations calling for narrow band spectrum systems
4. "for a radio system capable of supporting day-to-day operations of the participating agencies while also seamlessly able to handle emergency situations reliably, efficiently, enhancing safety of responders and the public through interoperability and predefined emergency communications planning and implementation."

Purpose Of The *Needs Assessment* Phase Of This Project

In general terms, the purpose of the *Needs Assessment* phase is stated in the following paragraph from the ETIC's *Call For Proposal*:

> Ten counties in Montana (Richland, Dawson, McCone, Garfield, Wibaux, Prairie, Fallon, Custer, Carter and Powder River) have formed the Eastern Tier Interoperability communications consortium to conduct the assessment of the current issues and concerns that need to be addressed by each engineering firm contacted for cost proposals relating to the Eastern Tier Interoperability Consortium. The Consortium is looking to enhance the performance, interoperability, and scalability in a new generation public safety wireless network that will meet the consortium's growing demands, future missions and expanding responsibilities.

More specifically, the *Call For Proposal* outlined the purpose of the *Needs Assessment* phase to produce:

- A design built upon existing public safety communications infrastructures
- A plan which identifies and addresses the needs of all relevant public safety communications users from each of the participating counties collectively and individually.

- A design that accommodates expansion plans for all relevant user groups in the network.
- A design, which integrates communications among all relevant users, groups.
- A system which is based upon current Federal and State communication standards (Office of Domestic Preparedness, SIEC and APCO P25).
- A plan that meets the technical, schedule and other requirements of state funding sources including the SIEC, Montana DES and Mt. Public Safety Services Office.
- A plan in the VHF frequency band which allows interoperability with existing systems at the local, county, and state level as well as with the ETIC.
- An infrastructure that will operate as a day-to-day communications network.
- A plan which will achieve coverage goals in all areas of concern in each county.
- A plan to include additional frequencies to minimize short-term problems while accommodating the future.
- A plan that is affordable and a practical system to meet immediate and future needs.
- A plan that will work toward building off of existing infrastructure and using existing radio coverage maps along with personal experiences of local officials.
- A plan that will develop partnerships with existing and new facilities and agencies, pursuing the goal of Homeland Security to have radio communications to all emergency responders in time of an emergency.